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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,385	06/27/2001	Cary Lee Bates	ROC920010052US1	4740

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EXAMINER

VO, TED T

ART UNIT	PAPER NUMBER
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2122

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DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,385

Applicant(s)

BATES ET AL.

Examiner

Ted T. Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-20 and 28-39 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 8, 11, 21-23 and 26 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 7, 9, 10, 24, 25 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

1. This action is in response to the application filed on 06/27/2001.

Claims 1-39 are pending in the application.

Specification

2. The specification is object to because the Brief Description Of The Drawings fails to give the brief descriptions of Fig. 8A and Fig. 8B. Fig. 8 does not included in the Drawings. All the appearance of "Fig 8 should be change into Fig. 8A or Fig 8B. Correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanson et al., "A Machine-Independent Debugger", Software – Practice And Experience, Nov 1996.

Given the broadest reasonable interpretation of followed claims in light of the specification:

As per claim 1:

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Hanson discloses *"A method of debugging a program in a computer system, comprising automatically removing at least a portion of all breakpoints associated with a particular job from the program when a debugger gets control (See page 1279, Figure 1) of the program for the particular job (See page 1280; using Nub_remove to remove breakpoints).*

As per claim 2: Hanson discloses, *"The method of claim 1, wherein the portion is removed during a time when execution of the program is halted"* (see page 1288 line 16, "Once all breakpoints are removed, a command runs the target to completion").

As per claim 21:

Claim 21 recites a computer readable medium that has the limitation corresponding to the functionality of claim 1. Claim 21 is rejected in the same reason set forth in connecting to the rejection of claim 1.

As per claim 22:

Claim 22 recites a computer readable medium that has the limitation corresponding to the functionality of claim 2. Claim 22 is rejected in the same reason set forth in connecting to the rejection of claim 2.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 6, 8, 11, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson et al., "A Machine-Independent Debugger", Software – Practice And Experience, Nov 1996.

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As per claim 3: Hanson discloses the debugger removes at least one breakpoint from the target (using Nub_remove).

Hanson does not expressly show *upon returning control from the debugger to the program, automatically reestablishing at least one useful breakpoint from the removed breakpoints*

However, Hanson discloses Nub_set that provides insert breakpoints into the target (See page 1280; using Nub_set to set breakpoints).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to use Nub_set in order to reinsert a particular breakpoint. Doing so would allow a user to pay more attention at a particularly program portion.

As per claim 6: Hanson further discloses, *"The method of claim 3, wherein the at least one useful breakpoint may be encountered by a thread which is allowed to execute when control is returned from the debugger to the program"* (see Figure 1, and see page 1280, lines 17-26).

As per claim 8: Hanson discloses *"A method of debugging a program in a computer system, comprising: upon a debugger getting control of the program for a particular job (see page 1277, section Introduction, "— the target —", and see Figure 1, page 1279), determining whether at least one useful breakpoint exists in the program for the particular job; if so,*

removing from the program all breakpoints associated with the particular job except the at least one useful breakpoint (See page 1280; using Nub_remove to remove breakpoints).

Hanson does not expressly show *prior to returning control to the program from the debugger, determining whether at least one of the removed breakpoints is useful; and if so, reestablishing the at least one of the removed breakpoints.*

However, Hanson discloses Nub_set that provides insert breakpoints into the target (See page 1280; using Nub_set to set breakpoints).

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to use Nub_set in order to reinsert a particular breakpoint. Doing so would allow a user to pay more attention at a particular program portion.

As per claim 11: Hanson further disclose, "*The method of claim 8, further comprising returning control to the program*" (see Figure 1, and see page 1280, lines 17-26).

As per claim 23:

Claim 23 recites a computer readable medium that has the limitation corresponding to the functionality of claim 3. Claim 23 is rejected in the same reason set forth in connecting to the rejection of claim 3.

As per claim 26:

Claim 26 recites a computer readable medium that has the limitation corresponding to the functionality of claim 6. Claim 26 is rejected in the same reason set forth in connecting to the rejection of claim 6.

Allowable Subject Matter

7. Claims 12-20 and 28-39 are allowed.

The cited prior arts of record taken alone or in combination fail to teach the claims to a method and computer readable medium that debugs a program in a multi-user system comprising at least features: "*during a time when execution of the program is halted, removing all breakpoints associated with a particular job from the program; executing a task to identify each useful breakpoint located in the program, wherein a useful breakpoint is one which may be encountered upon resuming execution of the program*", as recited in independent claim 12 and in such manners recited in independent claim 28.

8. Claims 4-5, 7, 9-10, and 24-25, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The cited prior arts of record taken alone or in combination fail to teach the claims to a method and computer readable medium that debugs a program in a multi-user system comprising at least features that recite:

in such manners as in Claims 4 and 24: *wherein the at least one useful breakpoint is determined by executing a task to identify each unexecuted breakpoint located in an unexecuted portion of the program;*

in such manners as in Claims 5 and 25: *wherein the at least one useful breakpoint is determined by analyzing a behavior of a user responsible for setting the at least one useful breakpoint.*

in such manners as in Claims 7 and 27: *wherein upon returning control from the debugger to the program at least one thread is prevented from continuing execution and wherein any breakpoints which may have been encountered only by the at least one thread during continuing execution are considered useless and are not reestablished.*

in such manners as in Claim 9: *wherein at least one of (i) determining whether at least one useful breakpoint exists in the program for the particular job and (ii) determining whether at least one of the removed breakpoints is useful comprises executing a task to identify at least one breakpoint which may be encountered upon resuming execution of the program.*

in such manners as in Claim 10: *wherein at least one of the at least one useful breakpoint and the at least one of the removed breakpoints is determined by analyzing a behavior of a user responsible for setting the respective breakpoint.*

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wooldridge et al., US No. 5,548,717, discloses Set Breakpoint and Cancel Breakpoint commands that perform the insertion and removal of a breakpoint.

Kimura, US No. 5,835,699, discloses a breakpoint setting and deleting system.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (703) 308-9049. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM ET. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam, can be reached on (703) 305-4552.

The fax phone numbers:

(703) 872-9306 (for formal communication intended for entry);

(703) 746-5429 (for informal or draft communication, please label "PROPOSED" or "DRAFT").

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

TED T. VO

Patent Examiner
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April 5, 2004